

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #123

1. Title:

Gender and Race Differences in Prognosis after Acute Myocardial Infarction

2. Writing Group:

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3. Timeline:

Surveillance hospital and subsequent CHD morbidity and mortality for 1987-88 are available now. Data from 1989 would be added when available this fall. Follow-up for all-cause mortality on death tapes is available for 3 field centers now.

4. Rationale:

While women have lower attack rates of acute MI and CHD death than men, the effect of gender on prognosis after myocardial infarction is unclear. Some studies have found no difference in prognosis between the sexes (1), other studies have shown females to have higher early mortality than males (2,3) with a particularly high mortality rate among black women when compared to the other race-sex groups (3). Data from the CCSP Study suggest that blacks may have a lower MI attack rate than whites, but MIs may be more likely to be fatal in blacks than whites (4). Furthermore, the proportion of all CHD deaths that occur within 24 hours of symptoms (sudden deaths) is higher in blacks than whites (4). These gender and race differences in prognosis following MI need further documentation. Differences between men and women and blacks and whites in hospital course and incidence of complications at time of the acute MI have been reported, as have differences in baseline prevalence of risk factors.

The ARIC Surveillance data provide an opportunity to examine the influence of both gender and race on prognosis following MI. The proposed analysis would compare the 28-day (acute phase) reinfarction and mortality rate between black and white men and women following an ARIC-classified definite or probable MI, and compare the frequency of sudden death in the four race-sex groups. Male/female and black/white morbidity and mortality rate ratios following acute MI will be compared to attack rate ratios. The analysis will also compare among black and white men and women who have suffered an MI the incidence of complications during the hospital stay for the first MI; for example, shock, rales, congestive heart failure, ventricular fibrillation, stroke, as well as heart rate and blood pressure levels on admission, and compare the prevalence of diagnostic and therapeutic procedures such as reperfusion and cardiac surgery in these patients. Differences in causes of death also can be examined.

5. Main Hypothesis:

- 1) Women are more likely than men and blacks more likely than whites to suffer a subsequent MI and/or die during the acute phase (within 28 days) following a definite or probably acute MI.
- 2) The proportion of all CHD deaths that occurs within 24 hours of symptom onset (sudden deaths) will be higher in blacks than in whites.

3) Women will suffer a higher prevalence of complications during the course of hospitalization for the initial MI compared to men.

6. Data:

1987-89 Surveillance morbidity (hospitalization) and mortality (in- and out-of-hospital CHD deaths; deaths from all causes from the annual death tapes) data from Forsyth County, Minneapolis and Jackson.

Washington County data will be included in those analyses for which there are complete data; specifically, analyses restricted to in-hospital mortality following acute MI, recurrent non-fatal MI, and the incidence of complications during the hospital stay. Washington County mortality data will not be included because of lack of out-of-hospital death, cause of death data, and no annual death tapes.

References:

- 1) Johansson S. et al. Sex differences in preinfarction characteristics and long-term survival among patients with myocardial infarction. *AJE* 1984; 119:610-623.
- 2) Kannel W, Sorlie P, McNamara P. Prognosis after initial myocardial infarction: The Framingham Study. *AJC* 1979; 44:53-59.
- 3) Tofler G. et al. Effects of gender and race on prognosis after myocardial infarction: Adverse prognosis for women, particularly black women.
- 4) Lee M, Borhani N, Kuller L. Validation of reported myocardial infarction mortality in blacks and whites. *AEP* 1990; 1:1-12.

Keywords: Gender, race, CHD